C-2 TOPSOIL

PURPOSE & APPLICATIONS

Topsoiling is the spreading of topsoil of a suitable quality over an area to be stabilized by establishing vegetation. Topsoil is the surface layer of the natural soil profile, generally characterized as being darker than the subsoil due to the presence of organic matter. It is the major zone of root development, containing nutrients available to plants, and supplying a large amount of the water to plants.

Vegetative growth is more rapid on sites with at least 4 inches of topsoil, and the health and quality of the vegetation is better than on sites with little or no topsoil. Topsoiling is applicable in the following situations:

- Where the use of topsoil is determined to be the most effective method of providing a suitable growth medium.
- Where high-quality turf is desirable to withstand intensive use or meet aesthetic requirements.
- Where the subsoil's texture, pH, or nutrient balance of the available soil cannot be modified by reasonable means to provide an adequate growth medium (sands, gravels, clays).
- The subsoil material is too shallow to provide an adequate root zone and to supply necessary moisture and nutrients for plant growth.
- The subsoil contains substances potentially toxic to plant growth.
- On slopes that are 2 to 1 (2 horizontally to 1 vertically) or flatter.

CONSIDERATIONS

- Stockpile and reuse existing native topsoil from the site.
- Consider using topsoil substitutes as an alternative to mining prime farmland soils.
- In site planning, the option of topsoiling should be compared with that of preparing a seedbed in subsoil. Limed and fertilized subsoils with proper seedbed preparation may provide an adequate growth medium if moisture is not limiting. Another option may be to use topsoil substitutes or soil amendments such as compost in lieu of natural topsoil.
- Topsoiling is a required procedure when establishing vegetation on shallow soils, soils containing potentially toxic materials, and soil with a pH of 4 or below (high acid).

SPECIFICATIONS

If topsoiling is to be done, the following items should be considered:

- Determine the volume of available topsoil exists on the site. Topsoil should be spread at a minimum compacted depth of 4 inches.
- Stockpile topsoil so that it meets specifications and does not interfere with work on the site.
- Allow sufficient time in scheduling for topsoil to be spread and bonded with the subsoil prior to seeding, sodding or planting.

Stripping: Stripping shall be confined to the immediate construction areas. A 4 to 6-inch stripping depth is common, but depth may vary depending on the particular soil. All perimeter dikes, basins, and other sediment controls shall be in place prior to stripping.

Stockpiling: Topsoil shall be stockpiled in such a manner that natural drainage is not obstructed and no off-site sediment damage shall result.

Side Slopes: Side slopes of the stockpile shall not exceed 2 to 1 (2 horizontally to 1 vertically).

Sediment Barrier: A sediment barrier shall surround all topsoil stockpiles. Refer to the SEDIMENT BARRIERS BMP.

Temporary Seeding: Temporary seeding of stockpiles shall be completed within 7 days of the formation of the stockpile, in accordance with the TEMPORARY VEGETATION BMP. In critical areas (near lakes, streams or wetlands) temporary seeding shall be completed within 24 hours.
Grading: Previously established grades on the areas to be topsoiled shall be maintained according to the approved plan. See the detail drawings located at the back of this section for proper grading.
Liming: Where the pH of subsoil is 6.0 or less, ground agricultural limestone shall be spread in accordance with the soil texture or the vegetative establishment practice being used.
Bonding: After the areas to be topsoiled have been brought to grade, and immediately prior to spreading the topsoil, the subgrade shall be loosened by discing or scarifying to a depth of at least 2 inches to ensure bonding with subsoil.
Applying Topsoil: Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading or proposed sodding or seeding. The topsoil shall be uniformly distributed to a minimum compacted depth of 4 inches. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. It is necessary to compact the topsoil enough to ensure good contact with the underlying soil and to obtain a uniform firm seedbed for the establishment of a high maintenance turf. However, undue compaction is to be avoided as it increases runoff velocity and volume, and prevents seed germination.

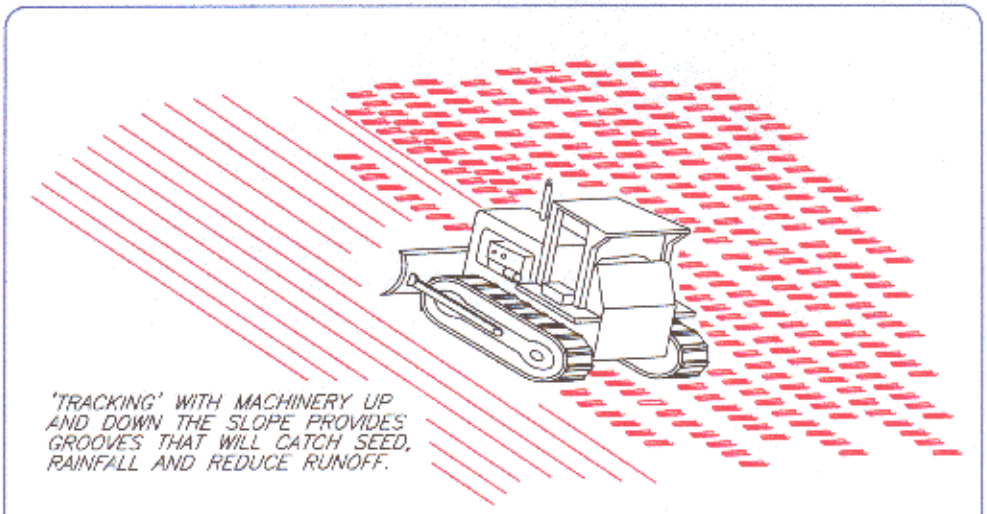
1. Topsoil Materials

Site investigations shall be made to determine if there is sufficient topsoil of good quality to justify stripping. High quality topsoil shall be friable and loamy (loam, sandy loam, silt loam, sandy clay loam, clay loam). Other soil types with high organic content may be found suitable after testing. It shall be free of debris, trash, stumps, rocks, roots, and noxious weeds. It shall give evidence of being able to support healthy vegetation. It shall contain no substance that is potentially toxic to plant growth.
All topsoil shall be tested by a recognized laboratory for the following and shall meet the requirements given:

- Organic matter content shall be not less than 3% by weight.
- pH range shall be 6.0-7.5. If pH is less than 6.0, lime shall be added in accordance with the soil test results and seeds requirements.
- Soluble salts shall not exceed 500 ppm.
- If additional off-site topsoil is needed, it must meet the standards stated above.

2. Topsoil Substitutes and soil Amendments

Using state regulated topsoil substitutes and soil amendments promotes recycling of our state's resources. Topsoil substitutes such are erosion control mix can be valuable materials for plant growth and are often rich in nutrients. Refer to the TEMPORARY MULCHING BMP. Successful establishment of vegetation can be very rapid and can be a cost-effective option when compared to purchasing topsoil. Also, specific blends of materials can be tailored to balance or correct the fertility of the existing soil conditions on the site.
The following general criteria apply to topsoil substitutes. For more detailed information, contact the generator directly.
Nutrient Content: Compare the nutrient content of the material with the nutrient needs of the plant cover to be planted. Additional nutrients may be needed to provide a balance for the particular plant species desired. Many of these materials are very nutrient rich. If misused, they can deteriorate water quality.
Setbacks: Contact the generator of the material you wish to use for information about any setbacks from wells and waterbodies that may apply to the material.
Limits of Use: Contact the generator directly about any limitations imposed on the material.



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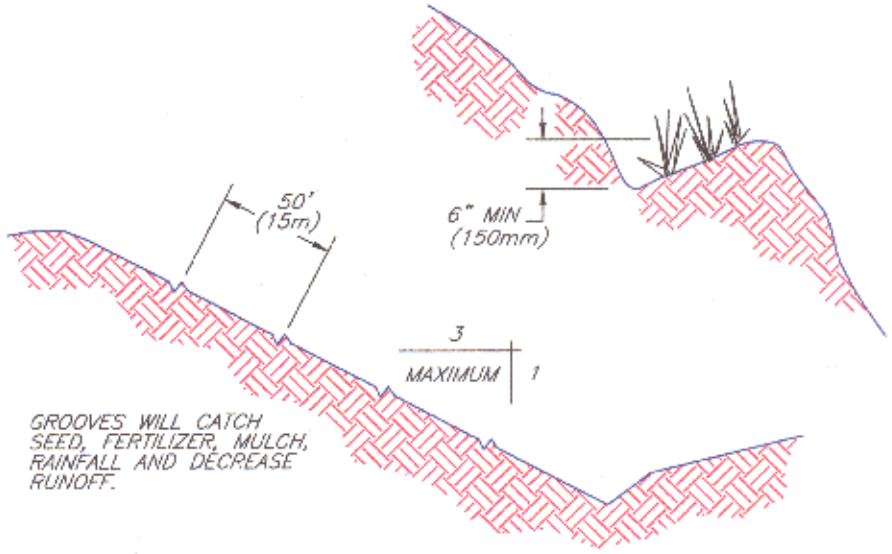

CONTOUR FURROWS

SURFACE ROUGHENING

FILE: SRFROUGH